

# IRWAN BELLO

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[irwanbello.github.io](http://irwanbello.github.io)

## EDUCATION

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|---|------------------------|------------------------|-----------------------|
| <b>Stanford University</b> - <i>MS in Statistics/Data Science (GPA: 3.89/4)</i>                         |                        |                        | Stanford, US          |
| Reinforcement Learning  | Deep Learning          | Statistical Learning   | Sept 2014 – June 2016 |
| Graphical Models  | Computer Org & Systems | Statistical Modeling   |                       |
| Stochastic Processes  | Distributed Computing  | Statistical Consulting |                       |
| <i>Teaching Assistant in CS231n: Convolutional Neural Networks for Visual Recognition (Winter 2016)</i> |                        |                        |                       |
| <b>Ecole Centrale Paris</b> - <i>MS in Applied Math (GPA: 3.85/4)</i>                                   |                        |                        | Paris, France         |
| Machine Learning  | Algorithms             | Graph Theory           | Sept 2011 – June 2013 |
| Optimization  | Probability Theory     | Linear Algebra         |                       |
| <i>Teaching Assistant: Conducted weekly oral exams in Math for sophomore students</i>                   |                        |                        |                       |
| <b>Lycée Hoche</b> - <i>Major in Math, Physics and Computer Science (GPA: 4/4)</i>                      |                        |                        | Versailles, France    |
| Preparatory program leading to the nationwide entrance exams to the French Grandes Ecoles.              |                        |                        | Sept 2009 – June 2011 |

## EXPERIENCE

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|--|--|-----------------------|
| <b>Google Brain Resident – Google Brain</b>  |  | Mountain View, US     |
| One year <i>research program</i> in deep learning: <a href="http://g.co/brainresidency">g.co/brainresidency</a> . Focus on <i>deep reinforcement learning, combinatorial optimization, search and backtracking</i> . |  | June 2016-June 2017   |
| <b>Research Assistant - AI Lab (Andrew Ng's group)</b>   |  | Stanford, US          |
| Research on <i>deep reinforcement learning</i> with an emphasis on <i>transfer learning</i> within the Atari domain and from the Atari domain to computer vision tasks.  |  | April 2015 – Dec 2015 |
| <b>Data Scientist Intern - Quora</b>   |  | Mountain View, US     |
| Built a pipeline (backend and frontend) to infer the knowledge in demand, analyzed historical traffic data and <i>prototyped a neural network language model for question generation</i> .                           |  | June 2015 – Sept 2015 |
| <b>Data Scientist Intern - PopSugar</b>  |  | San Francisco, US     |
| Led a project on style inference for ShopStyle's clothing brands: <i>Web crawling, NLP &amp; text mining, multi label classification using textual data and clustering analysis</i> based on survey data.            |  | May 2014 – Aug 2014   |
| <b>Visiting Research Student - NICTA (Ambiata)</b>   |  | Sydney, Australia     |
| Worked on <i>feature engineering (graph spectral theory, location inference)</i> and <i>feature selection (entropy based methods)</i> for large scale call records data. Python, Scala/Scoobi and GraphChi.          |  | Nov 2013 – April 2014 |
| <b>Machine Learning Intern - Infosys Machine Learning Lab</b>  |  | Bangalore, India      |
| Implemented a prototype for a general E-commerce <i>online recommender system based on Markov Decision Process</i> using Python.   |  | July 2013 – Sept 2013 |

## PAPERS

**Irwan Bello\***, Hieu Pham\*, Quoc Le, Mohammad Norouzi, Samy Bengio. Neural Combinatorial Optimization with Reinforcement Learning. *Under review for ICLR 2017*. <https://arxiv.org/pdf/1611.09940.pdf>

**Irwan Bello**, Yegor Tkachenko. Learning Control Policies from High-Dimensional Visual Inputs. *CS231n project (2015)*. [http://cs231n.stanford.edu/reports/ibello\\_yegor\\_paper.pdf](http://cs231n.stanford.edu/reports/ibello_yegor_paper.pdf)

## PROJECTS

|   |  |                      |
|---|--|----------------------|
| <b>Data Science Summer School</b>   |  | Guadeloupe           |
| Organizing a one week data science summer school in an eight-person team. Designing curriculum, class material, and coordinating logistics. Will be teaching a variety of subjects.     |  | Planned for Feb 2017 |
| <b>Humanitarian mission - Les Enfants du Soleil (NGO)</b>   |  | Fiana, Madagascar    |
| Organized a €20k volunteering project in a twelve-person team. Raised funds and identified most urgent needs. Taught and built infrastructures in a village of 100 orphans for 6 weeks. |  | Sept 2011-July 2012  |

## SKILLS

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|             |  |
|-------------|--|
| Programming | General: Python, C/C++, SQL, Bash/Unix, Git, Vim.  |
|             | Machine Learning: Tensorflow, Numpy, Scipy, Pandas, Scikit-Learn, Keras, Lua/Torch, R.<br>Prior experience with Scala, Graphchi/Graphlab and HTML. |
| Languages   | Native French speaker, French-German baccalaureate.  |

## AWARDS

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|---------------------------------------|--|------|
| Monahan Fulbright Scholarship (30k\$) | Five most deserving French STEM graduates studying in the US.        | 2014 |
| Rotary Global Grant (30k\$)           | Series of inspirational talks on my interests and life experience.   | 2014 |
| Mathematical Olympiad                 | Honors at the <i>French Mathematical Olympiad</i> in the 11th grade. | 2008 |

## EXTRACURRICULARS

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|--------------|--|
| Other skills | Piano, DJing, capoeira, tennis, soccer.  |
| Interests    | DJing & music production, future technologies, large scale social impact, competitive super smash bros melee, public speaking, travelling. |